

FY 1976, 1977 and 1978 RDT&E DESCRIPTIVE SUMMARY

Program Element # 114.41F

Title Defense Support Program (DSP)

Category Strategic Forces

Budget Activity #4 - Military Astronautics and Related Equipment

BACKGROUND AND DESCRIPTION: The Defense Support Program (DSP)

to the National Command Authority (NCA) and other designated users. The system also provides these more specific data:

Two dedicated ground stations, one overseas and one within the CONUS, receive, process data. The Joint Chiefs of Staff (JCS) have designated the Continental Air Defense Command (CONAD), Strategic Air Command (SAC), National Military Command System (NMCS), Atlantic Command (LANTCOM), Pacific Command (PACOM), European Command (EURCOM), as users of DSP data.

Evolutionary system improvements are intended to prolong the useful life of each satellite, make the satellite more survivable

, and increase the viewing area of each satellite.

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RELATED ACTIVITIES: --

Defense Satellite Communications System - Phase II (33110F) provides data communications routing. Advanced Airborne National Command Post (64723F) is a potential user of DSP data. DSP is a key element of the Worldwide Military Command and Control System (WWMCCS)

WORK PERFORMED BY: CONAD maintains operational control of DSP for the JCS. System operation and technical management responsibilities have been delegated to the USAF Aerospace Defense Command (ADC). The Air Force Logistics Command (AFLC) provides engineering and logistics support. Air Force Systems Command's Space and Missile Systems Organization (SAMSO), Los Angeles, CA, has overall development and procurement management responsibility. TRW, Redondo Beach, CA, is the prime contractor for the spacecraft and satellite integration. Aerojet ElectroSystems Company (AESC), Azusa, CA, is the prime contractor for sensor. Philco Ford Western Development Laboratories, Palo Alto, CA, is the prime contractor for the User Display and Data Acquisition and Communications segments. The Martin Company, Denver, CO, provides the TITAN IIIC booster. The Atomic Energy Commission (Sandia Corporation)

The Aerospace Corporation, Inglewood, CA, furnishes general systems engineering/technical direction to the DSP System Program Office.

PROGRAM ACCOMPLISHMENTS AND FUTURE PROGRAMS:

1. FY 1974 and Prior Accomplishments: Procurement of 12 satellites and TITAN IIIC boosters, construction of two data processing facilities, and provision of user displays, software, communications and a training facility (also used for software development and mission data analysis).

Future launches will take place when required to replenish satellites currently deployed.

Budget Activity #4 - Military Activities and Related Efforts

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2. FY 1975 Program: Expenditures include completion of modifications to satellites 5-12; completion of an improved focal plane array; hardware and software development for simplified processing stations; analysis of data gathered from orbital operations; data survivability developments; correction of ground station deficiencies; provision of training equipment; modification to ground stations to accommodate satellite capabilities; improvement studies; and continued support of DSP Augmentation.
3. Planned Program for FY 1976 and 77: Minor satellite improvements; initial development of an above-the-horizon viewing capability; continued funding of training equipment and modification to ground stations to accommodate satellite capabilities; continued development of simplified processing station hardware and software; satellite improvement studies; analysis of data gathered from orbital operations; and continued support of DSP Augmentation.
4. FY 1977 Planned Program: Continued development of an above-the-horizon viewing capability; continued development of simplified processing station hardware and software; development of a satellite survivable data transmission link; development of shuttle compatibility modifications; satellite improvement studies; continued analysis of data gathered from orbital operations; and minor satellite improvement modifications.
5. Program to Completion: RDT&E funding will support continued evolutionary development of the satellite system in support of DOD requirements. Primary emphasis will be directed toward eliminating or minimizing deficiencies discovered during operational employment, and development of the capability to utilize the space shuttle in lieu of the TITAN IIIC booster.

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6. Milestones:

<u>Date</u>	<u>Estimated Cumulative RDT&E Cost to Reach Milestones (\$ in Millions)</u>
- -	\$366.2
- .	375.8
	382.1
	392.0
- -	397.2
	405.8
	440.9
h. May 74	455.0
i. Oct 74	471.3

RESOURCES: (\$ in Millions)

	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>	<u>Additional to Completion</u>	<u>Total Estimated Cost</u>
RDT&E: Funds	60.1	33.8	16.4	4.8	22.7	Continuing	Not Applicable
Quantities	Not Applicable						
Missile Procurement: Funds	28.1	79.5	39.1	3.8	31.8	"	"
Quantities							
Satellites	0	1	0	0	0	"	"
Other Procurement: Funds	0	4.6	12.1	0	19.9	"	"

Budget Activity: #4 - Military Astronautics and Related Equipment

Program Element: 124.31F Defense Support Program (DCI)

Test and Evaluation Data

1. Development Test and Evaluation: The Defense Support Program is an operational system on which DT&E/IOT&E has been completed. OT&E is the responsibility of the operating command (Aerospace Defense Command). All discrepancies and deficiencies uncovered to date have been resolved or are planned to be resolved jointly by Aerospace Defense Command and Air Force Systems Command. Maintainability and reliability testing of the system were conducted by Air Force Systems Command during system development and continue to be conducted by the system operator (Aerospace Defense Command).

2. Operational Test and Evaluation: Current testing activity in the DSP is limited to the combined DT&E/IOT&E of the Simplified Processing Station (SPS). The combined DT&E/IOT&E is scheduled to commence in October 1976 and be completed by December 1976 and will be conducted on an SPS operational prototype.

The combined DT&E/IOT&E will be conducted at Kirtland AFB, New Mexico; Denver, Colorado; contractor's facilities; and will test the SPS interface with the NORAD, SAC, NMCC, and ANMCC command posts. An AFTEC test team composed of personnel from AFTEC, ADC, AFLC, SAC, ATC, MAC, AFCS, _ will conduct the IOT&E portion of the test.

The purpose of the IOT&E is to provide data and associated analysis of the operational effectiveness, suitability, and military utility of the SPS prototype to assist in a production decision, scheduled for December 1976, and to recommend desired changes in any follow-on production models. Analysis indicates that DSP data acquisition, processing, and message transmission may be performed in smaller, less costly, minimally manned receiving stations

3. Systems Characteristics: The DSP Simplified Processing Station (SPS) operational prototype contract has been awarded to a contractor team comprised of IBM and TRW. The SPS will be a lower cost version of the current large, fixed, dedicated DSP ground stations. It is intended to act as a backup to current ground stations,

Technical characteristics will be defined during contract award. No demonstrated performance characteristics are yet available.